SBC First to Surpass 100,000 DSL Subscribers

Aggressive Deployment Powerful Distribution Channels and Robust Customer Demand Combine to Make SBC the Nation's Leading DSL Provider

San Antonio, Texas, November 4, 1999

Fueled by tremendous third-quarter growth, SBC Communications Inc. (NYSE: SBC) now is the country's leading provider of high-speed, "always-on" Digital Subscriber Line (DSL) service. SBC became the first company to sell DSL service to more than 100,000 subscribers when it surpassed this milestone in October.

"Customer demand for SBC's DSL service has been spectacular, and our subscriber base has more than tripled in the last few months," said James D. Gallemore, executive vice president of strategic marketing for SBC. "DSL is emerging as the broadband service of choice for Internet enthusiasts, telecommuters and small businesses. Our service is widely available, affordably priced and provides guaranteed speeds and a level of choice competing technologies cannot match."

Today, SBC's DSL service is available to nearly 10 million households and businesses. However, SBC soon will reach significantly more customers through the recently announced Project Pronto, a more than $6 billion initiative that will transform SBC into America's largest single broadband provider and create a platform to introduce a host of next-generation, broadband-powered services.

Project Pronto will make SBC's DSL service available to an estimated 77 million Americans - 80 percent of SBC's customers - over the next three years and raise the minimum DSL connection speeds to 1.5 megabits per second (Mbps) and 6.0 Mbps depending on the package purchased. These speeds are up to 200 times faster than typical analog modem speeds, and are approximately four times faster than the current guaranteed minimum connection speeds the company offers.

To better serve its customers, SBC is creating partnerships with national and regional Internet Service Providers (ISPs) and leading computer manufacturers.

"Customers want the freedom to choose the ISP that best meets their needs," Gallemore said. "We're providing this freedom by enabling ISPs to offer SBC's DSL service to their members. We currently have agreements with more than 100 ISPs, and are continually adding more companies."

In a related announcement, SBC and Prodigy Communications Corporation, a leading national ISP, today said the two companies have signed an agreement to provide DSL service to Prodigy consumer and business Internet customers in markets where SBC offers DSL service.

SBC also is making ordering and installation faster, easier and more convenient for customers. Customers can order SBC's DSL service over the Internet, and SBC is developing splitterless technologies that simplify installation by eliminating the need for a SBC technician to install a splitter at the customer's premise. In addition, several computer manufacturers are offering PCs equipped with internal DSL modems.

For consumers, DSL's super-fast speeds and always-on connection enable them to experience the full richness and potential of the Internet. For smaller businesses that previously couldn't afford high-speed access, DSL is helping them revolutionize their businesses. A single DSL line can be networked to support multiple users and IP addresses, making it easier and more affordable for an entire office to receive high-speed access. DSL also provides access to technologies and applications similar to what larger companies enjoy, including enhanced e-commerce and web hosting capabilities.

Enterprise customers such as IBM, PeopleSoft and E*TRADE are providing thousands of their employees and end-users with a DSL-powered telecommuting solution that improves work-at-home productivity. From their homes, these telecommuters send e-mails, download software, videoconference with co-workers and react to breaking financial news, all at the lightening-fast speeds employees experience in the workplace.

SBC Communications Inc. (www.sbc.com) is a global communications leader. Through its trusted brands - Southwestern Bell, Ameritech, Pacific Bell, SBC Telecom, Nevada Bell, SNET and Cellular One - and world-class network, SBC provides local and long-distance phone service, wireless and data communications, paging, high-speed Internet access and messaging, cable and satellite television, security services and telecommunications equipment, as well as directory advertising and publishing. In the United States, the company currently has 87.3 million voice grade equivalent lines, 10.3 million wireless customers and is undertaking a national expansion program that will bring SBC service to an additional 30 markets. Internationally, SBC has telecommunications investments in 22 countries. With more than 200,000 employees, SBC is the 14th largest employer in the U.S., with annual revenues that rank it among the largest Fortune 500 companies.

PUBLIC UTILITY COMMISSION OF TEXAS

DOCKET NO. 20226

PETITION OF ACCELERATED CONNECTIONS, INC., D/B/A ACI CORP. FOR ARBITRATION TO ESTABLISH AN INTERCONNECTION AGREEMENT WITH SOUTHWESTERN BELL TELEPHONE COMPANY

DOCKET NO. 20272

PETITION OF DIECA COMMUNICATIONS, INC., D/B/A, COVAD COMMUNICATIONS COMPANY FOR ARBITRATION OF INTERCONNECTION RATES, TERMS, CONDITIONS AND RELATED ARRANGEMENTS WITH SOUTHWESTERN BELL TELEPHONE COMPANY

Volume I
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DEPOSITION OF AARON S. VINYARD, JR.

Austin, Texas

May 14, 1999

George A. Haas, CSR 5939

HAAS SHORTHAND REPORTING

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A. It just reports the last obtainable bit rate, noise that it recorded it had from the last time that the ATR was powered up and down.

So we use all of those numbers to help analyze whether or not we suspect a loop problem or an ATM type problem or an internet service provider type problem. We use that information to help us diagnose what the faults might be.

Q. Tell me a bit about the Alcatel hardware itself, the chipset itself. It's going to, when you initialize it, it's going to sync up at the highest achievable speed up and down?

A. Based on what you set your service profile at.

Q. Let's say you want to offer the customer 1.5 or better downstream and the 384 or better upstream?

A. Okay.

Q. It's going to try to sync up at the downstream side at the highest achievable bit rate, but no lower than 1.5?

A. That's correct.

Q. Tell me about the upstream. It's going to try to sync up at what?

A. Just 384.

Q. Just 384?

A. Just 384.

Q. It's not 384 to something?

A. Just 384, because that's what we set up in our profile. Our profile is set up at 384.

Q. You could say 384 or better with an upper limit?

A. We could.

Q. So the upper end of the 1.5 range is what, 6?

A. 6 is what we are tariffed as a service offering.

Q. But each of those up and down parameters you can set at a range or particular number if you want to?

A. That's correct.

Q. So once it initializes and syncs up at the speeds that it can, as long as it's on, it's going to stay at that speed unless it gets noise presented to it which causes bit error rates to be too high, above a certain parameter, at which point it will retrain downwards?

A. That's correct.

Q. I don't think I need to know what the duration of the degradation of bit error rate has

to be.

How long does it have to be bad before it retains downwards?

A. I'm not sure.

Q. Do you know if it's a matter of seconds? Minutes? Hours?

A. It has to seek the condition for a number of seconds before it declares that it can't meet that condition, then it goes into the retraining state. And typically, before it does it recovery and we observe it, maybe 30 seconds later.

But what goes on Alcatel would really have to tell us.

Q. We don't neat that much detail.

A. Okay.

Q. It's not a matter of minutes or hours, it's a matter of seconds before retraining can happen?

A. That's correct.

Q. Once it can't meet the bit error rate specified in the parameters, it's going to retain downward, meaning resynchronize at a lower transmission rate?

A. That's correct.

Q. Does that happen at both upstream and

downstream or just the downstream?

A. It could, but certainly only on the downstream have we a lot of flexibility. So -- that's where we see, based on our experience, that's where we normally see it anyway, between the 384 plus -- I'm sorry, the 1.5 plus scenario.

Q. That's where you are in the part of the spectrum where you can get occasional noise that causes retraining?

A. Exactly.

Q. If you are down in the 384 range you don't actually see that kind of noise that causes retraining?

A. Not if we were able to establish it for that at the beginning.

Q. Now, you set the retaining to happen, theoretically on either the upstream or downstream side?

A. Yes.

Q. What I'm saying, the equipment will allow, the equipment is set up to offering the retraining functionality on the upstream or downstream side?

A. That's correct.

Q. Let's stick with the downstream side

because that's where you said it could happen more often.

If it happens, let's say you are referring -- these are functions of whatever the increment is in the Alcatel hardware, either 32 K or 64 K, something like that?

A. Yes.

Q. Pretty small chunks or steps of band width?

A. Yes.

Q. Let's say you are connected to take at 3.5 megabits per second downstream and you get this condition where you can't support 3.5 or whatever the number of seconds is required. It's going to retain down in that function to the next lower achievable speed?

A. The first thing it's going to try to do is -- it has the ability and it's the ADSL technology, has the ability to actually do bit zap swapping so it can try to obtain the highest available bit rate, move the frequencies around .

Q. In realtime?

A. In realtime. If that is not accomplished, the next step it would move to a slower speed.

What example did you have.

Q. I said 3. Running at 3 megabits?

A. 3 megs. It may come back at 2.8.

Q. It's going to step down to the next achieve -- highest achievable speed?

A. That's correct.

Q. That's what we call retraining?

A. That's correct.

Q. If it's running along at, for example, at 2.8 and the noise clears up, will it retrain upward?

A. No, not unless you power down the unit. Then it will go through the whole scenario again.

Q. You have to reinitialize the unit to make it train to a higher rate?

A. That's correct.

Q. Now, on the upstream side, the 384 example, the equipment will let you specify the same kind of range, I think you said?

A. Yes.

Q. But you have chosen to say, I'm going to leave it at a 384 right?

A. Because that's what our tariff minimum service offering is.

Q. I'm trying to understand?

A. The flexibility.

Q. The flexibility of the equipment itself.

The folks that do the marketing and stuff decided you want to offer 384 and up?

A. That's correct.

Q. When you offer 384 up, what happens, even though you said it doesn't happen very often, what happens to the equipment given you configured it for a particular bit rate, if it can't achieve that bit rate because of noise?

A. It won't sync. The modems won't sync and the red light will come on at the local customer site, showing as a visual it was unable to sync.

Q. Meaning they can't send any data up?

A. It's completely out of service as far as the customer is concerned.

Q. Can they still get downstream transmissions?

A. No.

Q. Can't get either way?

A. Can't get either way.

Q. You also have a tariff combination of

384 down/128 up?

A. That's correct.

Q. And is that 384 up to a range of 1.5, I think?

A. Yes.

Q. And the upstream side is still a set 128, right?

A. That's correct.

Q. Same kind of things happen if you can't achieve 384 down, it would retrain down to the next lower achievable speed, right?

A. That's correct.

Q. On the upstream side --

A. I'm sorry. Could you repeat that.

Q. I'm looking at the downstream side. We are in the 384/128 combination?

A. Okay.

Q. If you can't achieve 384 down --

A. It will not sync. That's the minimum available, allowable, right.

Q. Let me come back to the other example. I understand.

On the 1.5 down/384 up, the higher speed combination you offer under the tariff, we talked about a 3 meg example retraining to 2.8?

A. Yes.

Q. If you are sync'd at 1.544 and you can't maintain that because of noise causing bit error rates that are too high, what happens?

A. It will retrain back at the next available bit rate, which may be only one megabit, but it's still above the minimum available 384; the guaranteed level which was 384. It fell, but it didn't fall enough that it's still obtainable.

Q. Okay. But the 1.A 44 service, isn't that guaranteed to be that or higher, or is it 384 or higher?

A. On the 1.544 is allowed to float up to 6 megabits. The example we used, 3 coming back down to 2.8, which is still above 1.5.

Q. I want to stay with that higher speed example?

A. Okay.

Q. On the downstream if you can't achieve and maintain 1.5 what happens?

A. It won't sync.

Q. In other words, you get the same red light, no can do?

A. Same red light. It's out of service.

Q. But I take it this is something that

you can -- the hardware allows you to specify an acceptable range of operation or a fixed point?

A. That's correct.

Q. So you could say let me test the limit the of this.

From a hardware standpoint, could you say I want you to let this particular ATUR or ATUC combination for this customer sync and operate at anything between whatever the smallest chunk is, 32 K and 6 megabits on the downstream side?

A. It has that flexibility.

Q. And the same is true on the upstream side, up to the limits of the upstream capability of the equipment?

A. It has that flexibility.

Q. Now I understand.

The last example. Let's do the slower example again, 384/128 combination.

A. All right.

Q. The same rules apply. That is you can specify either a range or a particular rate for upstream and downstream channels?

A. Yes, absolutely. It's a very same electronics being used for either service offering.

Q. You just put different parameters on

the different offerings on the same equipment?

A. That's right.

Q. It's not one ATUR for the fast and one for the slow?

A. Correct.

Q. It's the same equipment. You can train the transmission parameters differently?

A. That's correct.

Q. Are those something you have to do by going to the customer premises, or can you respecify those from the Alcatel workstation location?

A. Alcatel workstation.

Q. You can do, if somebody says, I have the 384/128, but I want to go up to the 1.5/384, you can do that from the workstation?

A. Yes.

Q. And verse versa?

A. Yes.

Q. I need to understand. I want to use the fast example, the 1.5/384 example.

It seems like you are going to be able to be more robust if you specify ranges that are acceptable than fixed points. Does that seem right?

A. Yes, I agree with that.

Q. I can understand a 1.5 to 6 range. What I don't understand is why y'all have chosen to specify 384 as a fixed point given if you don't achieve it you just drop out. Why is that?

A. That was a number the marketers came up with where they saw the industry going as far as costs, benefits.

Q. I'm with you.

A. Okay.

Q. I take it from a technical standpoint and a testing standpoint, somebody must have believed that you could routinely maintain and achieve 384 and it was okay to make it a fixed point constraint?

A. Yes, absolutely. The assumption we had, if you can obtain 1.5 downstream, inbound to you, 384 upstream on the very same loop plant should be a no brainer.

Q. Okay. I'm with you.

A. And still, at 384, not inducing the additional interference into the outside plant.

Q. Makes sense to me.

Now, the test for sync rates is what we just described. Can you sync at the required

384 up and at least 1.5 down in the last example?

A. Yes.

Q. This testing that the workstation performs returns those sync rates?

A. Yes, that's correct.

Q. And is that an actual test or is that accessing the database to say what have you achieved in terms of sync rates?

A. It's just accessing the database to see what you have achieved.

If you wanted to actually dynamically make it retrain, it has that flexibility to actually lock and unlock the customer ATUR.

Q. You can basically reinitialize from a remote occasion?

A. Exactly.

Q. By saying, I'm taking you down and bringing you back up again?

A. Yes.

Q. What about the power utilization, what is that?

A. Power utilization is the Alcatel gives you how much power did we utilize to obtain that rate.

It's a good tool that Alcatel provides

us to say if it took 98 percent of my power utilization to obtain a 384 signal level, customer is not going to be able -- they could never go above that.

Q. Because you pretty much hit the ceiling already?

A. Yes. So it's a good indication for us on how much power it took to accomplish that.

Q. And the power utilization, this has something to do the power spectral density masks?

A. Exactly.

Q. And the specification, you always achieve a signal of some speed if you blast enough power down the pipe?

A. Exactly.

Q. You don't want to do that because you create too much interference for adjacent circuits?

A. Yes.

Q. 98 percent means 98 percent of the power allowed by the PSD mask?

A. Exactly. So it's a good tool for us to use.

Q. You know my client and COVAD want to use your UNE loops for DSL services too?

A. That's right.